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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application Number: 09/831,334
Filing Date: January 09, 2002
Appellant(s): OENEMA ET AL.

Roger A. Johnston
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 07/25/2007 3appealing from the Office action mailed 08/03/2004.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The amendment after final rejection filed on 1/7/05 has been entered.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

| | |
|---|---|
| US 5,900,999 | Huizenga |
| US 6,247,823 | Fuerst |

US 2007/0122763 Farzin-Nia

US 2005/0281517 Wessels, Jr. et al.

Admitted prior art set forth in applicant's specification, p. 6-7.

Also relied upon in this Examiner's Answer are the following websites listing mechanical properties for the materials used in the references listed above:

Goodfellow websites -

http://www.goodfellow.com/csp/active/gfMaterialInfo.csp?MATID=CU00&form=All

http://www.goodfellow.com/csp/active/STATIC/A/Brass_.HTML

http://www.goodfellow.com/csp/active/gfMaterialInfo.csp?text=*P&MATID=ES34&material=1

http://www.goodfellow.com/csp/active/STATIC/E/Polyacrylonitrile-butadiene-styrene.HTML

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huizenga (US Patent No. 5,900,999) in view of Fuerst (US Patent No. 6,247,823).

Huizenga discloses a mirror assembly and method for making the same including a support (at 12), a mirror housing (11) including a single build up element (19) formed of non-conductive material with conductive strips molded therein, a mirror plate (13), and electromechanical means (shown in fig. 3) for adjusting the mirror plate relative to the housing. Note that Huizenga's conductive strips inherently provide increased strength and rigidity of the build up element.

Huizenga does not disclose electromechanical means for adjusting the housing relative to the support, means for performing ancillary function, or an electronics unit received in the hollow for controlling energization of the mirror adjustment. However, each of these features is known in the prior art--the means for adjusting the housing relative to the support and the means for performing ancillary function as taught on pages 6-7 of the instant specification and the electronic PCB in the hollow of a build up element as shown in fig. 1 of Fuerst. It would have been obvious to the ordinarily skilled artisan at the time of invention to include known means for adjusting the housing relative to the support and for performing ancillary function in order to allow for folding of the mirror unit when parking or storing the vehicle and to provide the mirror with an auxiliary function such as a turn signal, mirror heater, etc. Further, it would have been obvious to include an electronics unit which includes a PCB in the hollow of a mirror build-up element as taught by Fuerst in Huizenga's system in order protect the electronics unit, which provides for the various ancillary functions (heating, etc.), from deleterious environmental effects as taught by Fuerst (see the abstract).

**(10) Response to Argument**

Appellant has argued that the electrical conductors shown by Huizenga do not necessarily increase the strength and rigidity of the build-up element (19), noting that "thin metal conductors, such as wires, are often flexible and not rigid." Appellant further argues that "the mere possibility of increased strength and rigidity is not enough to support the rejection...based on inherency."

In response, it should first be noted that the claimed invention does not require the strength and rigidity of the build-up element to be increased by any particular amount, nor to be

increased in any particular manner or direction. It is the examiner's position that molding a relatively strong material into a much weaker one as shown by Huizenga will *necessarily* provide at least some measure of increased strength and rigidity, in at least one dimension. That such a property or benefit is not the focus of Huizenga's invention does not negate the fact that the property or benefit is still present in his device. Further, once the examiner presents evidence or reasoning tending to show inherency, the burden shifts to the applicant to show an unobvious difference.

In addition, contrary to Appellant's statement on p. 4 of the Appeal Brief filed 05/21/2007 that "a material with a high tensile strength may stretch and deform a great deal before breaking (i.e. have high ductility, and therefore <u>low</u> rigidity). A high tensile strength material can easily have less rigidity than a lower tensile strength material," tensile strength is, in fact, the measure of force per unit area (i.e. pressure) required to rupture, stretch, or tear the material. Consequently, the higher the tensile strength, the stronger the material resists such deformation. Generally, materials with high tensile strength also have high rigidity. Because some materials are anisotropic, stiffness or rigidity is often more accurately described by the modulus of elasticity (also known as Young' modulus or tensile modulus). See, e.g., Farzin-Nia (US Patent Application Publication No. 2007/0122763) which teaches in par. 44 that, "The ability to resist plastic deformation is dependent on the modulus of elasticity (Young's modulus) of the material, which is a measure of the stiffness or rigidity of a material. Thus, a material with a lower modulus of elasticity has a lower stiffness and a lower hardness than a material with a higher modulus of elasticity."

Additionally, it is understood in the art that the inclusion of a less rigid material into a particular substance will reduce the overall rigidity of the substance and the inclusion of a more rigid material will increase the rigidity of the same substance. See, e.g., par. 25 in Wessels, Jr. (US Patent Application Publication No. 2005/0281517). Though the Appellant has argued that the housing protects the leads and is not made more rigid by them, the claimed limitation is directed to a reinforcing element insert for increasing the rigidity and strength of the build-up element. Hence, if the insert has a higher rigidity and strength than the build-up element (i.e. than if the housing were made all of a single material), it meets the claim. In other words, the only relevant question is whether the Young's modulus of the electrical leads of Huizenga is greater than the Young's modulus of Huizenga's housing material.

Huizenga shows electrical conductors (68,70,72,74) in figs. 4 and 7-15. These conductors are molded into the build-up element (e.g. col. 9 lines 5-12). The conductors are taught to be made of any of a number of materials, including the metals brass and copper (col. 9 lines 13-42). Further, the build-up element (19) in which the conductors are molded is taught to be made of a plastic material such as ABS or PBT.

Brass and copper, taught by Huizenga to be useable as the conductors (68,70,72,74), naturally have a *much* higher tensile strength and modulus of elasticity than do ABS and PBT, taught by Huizenga to be useable for the build-up element (19). See the attached material property documents which list the following values for tensile strength and modulus of elasticity:

| Material | Tensile Strength | Young's Modulus | |
|---|---|---|---|
| Brass | 300-700 MPa | 100-115 GPa | } conductor materials |
| Copper | 224-314 MPa | 129.8 GPa | } |
| ABS | 41-45 MPa | 2 GPa | } housing materials |
| PBT | 50 MPa | 2.1-2.4 GPa | } |

Thus, when brass or copper conductors are molded into the ABS or PBT build-up element, as is taught by Huizenga, these conductors, which *inherently* have a much higher strength and rigidity than the plastic of the build-up element, will *inherently* provide the build-up element with at least some measure of increased rigidity and strength, along at least one dimension (e.g. the longitudinal dimension of the conductors).

Appellant has made similar arguments in regard to the method claim. In response, the examiner's arguments are repeated.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Mark Consilvio

Stephone B. Allen
Supervisory Patent Examiner

Conferees:

Ricky Mack

Stephone Allen

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.